

The American Midland Naturalist

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that of the Prairie States

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The American Midland Naturalist

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No. 6

THE ALLEGHANY WOOD RAT IN INDIANA

P. F. HICKIE AND THOMAS HARRISON

While trapping mammals in Indiana during the summer of 1930, we took four specimens of *Neotoma pennsylvanica* Stone, the Alleghany Wood Rat, in the limestone cliff region of southern Indiana, Harrison County. So far as we are aware, this is the first record of specimens from Indiana, although they have been vaguely mentioned in scientific literature for 58 years.

Cope, 1872, in Observations on Wyandotte Cave and its Fauna¹ says: "The rats also have brought into fissures and cavities communicating with the cave, seeds, nuts, and other vegetable matter, from time immemorial, which furnished food for insects." This appears to be the first mention of a "rat" [Neotoma] in Indiana.

Packard, 1888, in Cave Fauna of North America², writes, "A 'cave rat' was described to me by Mr. Rothrock as having been seen in the main Wyandotte Cave. It was said to be of the same color as the domestic rat, but with a body longer, somewhat like a weasel's; the whiskers are larger than those of a rat and the 'ears are nearly twice as large': It is probably a Neotoma."

Evermann and Butler, 1894, List of Indiana Mammals³ mention Neotoma as possibly occurring in caves but give no definite record of its ever having been noticed.

Blatchley, 1897, Indiana Caves and their Fauna⁴, writing about Wyandotte cave says: "The cats have exterminated the 'rats' (*Neotoma*) mentioned by Cope and Packard as being inhabitants of the cave."

Hahn, 1909, Mammals of Indiana⁵, mentions the possibility of *Neotoma*'s occurrence in Indiana, and points out the fact that there is much territory in southern Indiana suitable for its habitation.

Goldman, 1910, Revision of the Wood Rats of the Genus *Neotoma*⁶, gives a map of the distribution of *Neotoma pennsylvanica* showing it to stop on the south side of the Ohio river.

It seemed reasonable to surmise that they might be found across the river. This view was materially strengthened by Enders⁷, who reported a specimen of *Neotoma* taken by Hine from Hocking County, Ohio, in 1924, and another specimen reported from Scioto County.

The vicinity of Wyandotte Cave was selected as the most likely territory, especially as one of the guides at the cave, in answer to a questionnaire, had written rats occurred in the cave. Inquiry there elicited the information that they occurred in Wyandotte Cave, but traps set in the cave in places where they were said to have been seen yielded only a white-footed mouse, a new specimen for the cave, but no wood rats. The traps were placed nearly half a mile in from the entrance. The guide was unable to find even traces of rats.

The first real inkling of their presence came from a man who had prospected in the West for gold and knew them there, where they are common. He had seen their piles of sticks in the mouths of caves along the cliff above his home in Crawford County and had even caught two while trapping mink and weasels in the winter. His aid was solicited, but all to no avail. He was unable to locate the piles of sticks, and traps placed in that locality yielded nothing.



Flashlight photograph of Alleghany Wood Rat in small cave at Tobacco Landing, Indiana, August, 1954, by P. E. Hickie.

From there the search shifted on to the east a few miles, near Road 62 and just within Harrison County, where it was reported there was a small cave in which they had once abounded in great numbers. A guide offered his services and our party scoured the steep hillside in search of the cave. Failing to find the cave, another guide was procured, but again the cave eluded us. Finally we left with the understanding that we were to be called when the cave was located.

One other locality seemed to offer possibilities. Mr. C. C. Deam, Research Forester of the Indiana Conservation Department, reported high cliffs and a buzzard's roost at Tobacco Landing. Going southward from Laconia, a narrow rocky road leads down to the Landing, a lonely place graced by a single dwelling and a light for guiding Ohio River steamers. The house stands at the base of a high cliff and overlooks the Ohio river from a safe distance above its spring floods. A series of interrupted ledges traverse the side of the cliff and along these are found a number of small caves. The first one we investigated showed unmistakable signs of the presence of rats. Piled on top of a huge boulder was a collection of debris—small sticks, fresh twigs and leaves, corn cobs, bones of mammals, pokeberries, nuts, etc. Near by was another rock on which a pile of small stones had been collected. We continued our search and soon located a nest in an obscure niche. It was composed of the bast fibers of trees loosely formed into a deep, thick-walled cup. There could be no doubt now of the presence of *Neotoma*. The penetrating gleam of the flashlight moved on, then stopped suddenly. There sat a wood rat in its full glare, blinking serenely out, apparently unalarmed and entirely at ease.

To avoid disturbing it, the flash was immediately snapped off. We were too close for a shotgun and the .22 with shot loads was in the car at the Landing. We went for it and fifteen minutes later when we returned the rat

was still resting in the same place. By a bit of cooperation, one holding the flash and the other shooting, it soon entered our collection.

On our return trip from Tobacco Landing, we were informed that the cave we had searched for so long had been found and a rat had even been seen. We went to it immediately, and though it was five hours since the rat had been seen, it was still in about the same place. At first only its nose could be seen, but it became curious and edged out a trifle too far. At the report of the gun it toppled over and we had another specimen.

Subsequent trapping at Tobacco Landing yielded two more specimens. It is probable that *Neotoma* occurs in suitable habitats throughout this region. The four specimens were all from Harrison County, but since the limestone cliffs and caves extend into the adjoining Counties of Spencer, Perry, Crawford, Floyd and Clark, there is great likelihood that *Neotoma* will eventually be found in them, or even at some distance north of the Ohio river. Judging from their habits, it is unlikely that they would be able to survive long the attacks of their enemies, the carnivorous and predacious birds and mammals in the absence of safe hiding places in caves and under ledges along inaccessible limestone cliffs.

The "Cliff" rats or "Cave" rats, as they are locally designated, can hardly be said to offer an economic problem. They are known to but a few of the inhabitants since they are not overly abundant, are mainly nocturnal, and are found in obscure places. Their diet is composed of such things as green vegetation, nuts, berries, roots and seeds. The bait used on the traps set at Tobacco Landing and elsewhere was Anthony's combination bait, one part chopped bacon, one part ground raisins, two parts oily peanut butter and rolled oats sufficient to make the mixture a putty-like consistency. They have little, if anything, in common with

the ordinary Brown or Norway Rat and by most naturalists it is regarded as unfortunate that they should bear the opprobrious name of rat.

The data on the four specimens: Taken at Tobacco Landing; No. 105 (P. H.): Male; total length 369, tail (broken) 141, hind foot, 44.0, ear 31.6 mm, weight 342 grams; No. 107 (P. H.): female, 397, 183, 43.3, 30.3, 291.6; No. 108 (P. H.): female, 377, 175, 43.0, 30.0, 238.7. Taken in the cave along Road 62, near Wyandotte, but in Harrison County; No. 70 (T. H.): male, 387, 184, 39.8, 26.9, 283.

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TYPE-SPECIMENS, MR. BLAKE AND THE INTERNATIONAL RULES

OLIVER ATKINS FARWELL

I have read with much interest and careful thought and consideration the article by Mr. Blake in *Rhodora* for September, 1930, pages 182-185, on "The Typification of *Scirpus capitatus* L." It seems to me that Mr. Blake puts too much emphasis on "Typification" and in practice carries his typification idea way beyond the limit of common sense and sound reason. Mr. Blake's argument may have some weight under the American code which he seems to have had in mind when he wrote his thesis; but none whatever under the International Rules which I am following. I can find nothing in them that recognizes the "type-specimen" idea or the "name-bringing synonym" expression, as opposed to the "description." The International Rules, if it recognizes a type, recognizes the description as the type, not a herbarium specimen. Mr. Blake apparently is unable to assimilate this idea.

My interpretation of *Scirpus capitatus* Linn, or its type, to please Mr. Blake, is the description of Linnaeus based upon some other plant than the Clayton No. 380 (the Kalm specimen later known as *Eleocharis obtusa*) but not upon that specimen itself; specimens are only illustrations, not types. The Clayton specimen, according to Blake, has what may be called a subglobose spike, very similar to that of the Kalm specimen. Linnaeus knew this, hence cited the Gronovian description as a synonym. I can find nothing in the International rules that makes the Gronovian Flora or Virginia the foundation stone of the *Species Plantarum*; or the Clayton specimens, the types of species in the *Species Plantarum*

whenever the Gronovian descriptions are cited. Mr. Blake is trying to write into the International Rules something that cannot be found there—the type-specimen idea of the Neo-American botanist. Mr. Blake has brought no *real evidence* that the Kalm specimen *was not in the Linnaean Herbarium in 1753*, and in so far as the Jackson Index to the Linnaean Herbarium is concerned there is nothing to prove that it (the Kalm specimen) is not one of those that "was by some accident not recorded by Linne" in 1753. Mr. Robert Brown was not infallible and may have been mistaken, even as Mr. Blake. I will stand corrected when Mr. Blake gives the actual history of the Kalm specimen subsequent to 1751 and gives the actual date of its deposit in the Linnaean Herbarium. This information may be known to some, but evidently to neither Mr. Blake nor myself, but whether or not the Kalm specimen was in the Linnaean Herbarium in 1753 is absolutely immaterial; it is not necessary to the subject matter under discussion that it should have been there.

Mr. Blake is correct when he writes that *Eleocharis capitata* (Willd.) R. Br. or *E. capitata* R. Br. cannot stand under modern botanical nomenclature. I did not say it could. What I did say was that *E. capitata* R. Br. could not be used for *E. tenuis* under the International Rules, and I still so maintain. Mr. Blake is wrong when he writes:—"If Brown had given a new specific name to the plant he described it would have held." Even so, it could not have held, as it would have had to give way to the older specific name "Caribaea." I have not seen the original description of Robert Brown of his *Eleocharis capitata*, and therefore I am unable to say if the specific name "capitata" was based directly upon Willdenow's *Scirpus capitatus*. It may be barely possible that Mr. Brown created a specific name entirely independent of the Willdenowian binomial, even though he brought the latter into the discussion.

To sum up: (1) Mr. Brown misapplies the name *capitatus* (if based upon *Scirpus capitatus* Willd.) and gave it to

a species of *Eleocharis* not considered as the Willdenowian type of *Scirpus capitatus*. It cannot, under the International Rules, be considered as a synonym of the Linnaean binomial and hence cannot be transferred to that species. Mr. Brown, according to Mr. Blake, specifically said his *Eleocharis capitata* was not conspecific with the Clayton No. 380 (*Eleocharis tenuis*) and so when Mr. Blake transfers the Brown binomial to it, in spite of Mr. Brown's statement, he is in turn, and inexcusably so, misapplying Brown's binomial.

(2) I fail to see that it has been proved that Linnaeus *did not draw up his own description from the Kalm specimen*; or that the latter was not one of the unrecorded species in the Linnaean Herbarium in 1753; its presence there at that time being immaterial anyway as Linnaeus saw it in 1751—hence his own description.

(3) Granting "(2)" to be effective, my use of "*Eleocharis capitata* (L.)" for *E. obtusa* (Willd.) Schultes, is correct under the International Rules, earlier usages being invalid and therefore not invalidating mine.

(4) The Clayton No. 380 and the Gronovian citation under *Scirpus capitatus* Linn. are to be excluded from that species and transferred to *E. tenuis* (Willd.) Schultes, to which they belong.

(5) *Eleocharis capitatus* (Willd. pp. but not as to the "name-bringing" synonym) R. Br. is a synonym of *E. Caribaea* (Rottb.) Blake, and must always remain so.

(6) Mr. Blake gives what he supposes to have been my reason for my paper on *Scirpus capitatus* Linn. Mr. Blake is again wrong. The sole reason for my paper was to present a most profound protest in the name of botanical science against such bold misinterpretations of the International Rules as we find in such an unnecessary transference of Robert Brown's name from the species to which he most definitely applied it to the one to which he as concisely said

it did not belong. Until now I have been under the impression that even the most radical type-specimen exponents have always accepted as the type of a species, the plant that the original author designated as such. Even if it can be definitely shown that Mr. Blake is correct and that I am wrong (which I do not at present admit, even for sake of argument), even then the proper designation for the *E. tenuis* would be *E. capitata* (L.) R. Br. ex Blake (but never R. Br., Prod. Fl. Nov. Hall. (1810) I 225) or more truthfully *E. capitata* (L.) Blake. It looks as though Mr. Blake did not have the courage to assume the responsibility, and so placed it upon the shoulders of the dead and gone Mr. Robert Brown. More evidence that the Clayton No. 380 is not the basis of *Scirpus capitatus* Linn. is found in comparing this species with the ones immediately preceding (*S. caespitosus*) and following (*S. acicularis*) where Linnaeus has no description of his own, the species being based on citations only. Where Linnaeus, had his own independent description, it was based on some plant he had seen, living or dried, not included under the citations. If Clayton's No. 380 had been the basis of *S. capitatus*, there could have been no reason for an independent description by Linnaeus, since that (Clayton's No. 380) was amply defined in the Gronovian description quoted.

Whether or not I am more in accord with the International Rules than is Mr. Blake, I will leave henceforth to the judgment of our fellow botanists.

Dept. of Botany,
Parke, Davis & Co.,
Detroit, Mich.

POLYCODIUM ASHEI

A New Deerberry from the Southeast

T. G. HARBISON

Several years ago W. W. Ashe called my attention to a *Polycodium* from the south Atlantic coast which seems to be different from any species described from that region¹. It belongs to the group with foliaceous bracts and small flowers but differs from the five species which have already been described in this group in being entirely glabrous. The absence of pubescence in all its parts, even in early aestivation, together with the dense mantle of bloom covering twigs, foliage and fruit are salient characters unique in the group of the genus with small flowers and foliaceous bracts. Mr. Ashe's plant represents a form with which I was already familiar. He submitted specimens of this species of his own collection which showed its distribution, as well as specimens of related species for comparison. A number of specimens in the National Museum were also placed at my disposal for study.

I take pleasure in associating Mr. Ashe's name with the proposed species, a description of which follows.

(¹) *Picrococcus* (*Polycodium*) *floridanus* Nuttall, in Tr. Amer. Phil. Soc., New Series, 8:262. 1841.—*Vaccinium* (*Polycodium*) *caesium* Greene, Pittonia, 3:249. Dec. 1897.—*V.* (*Polycodium*) *revolutum* l. c. *Polycodium oliganthum* Greene, Leaflets, Botanical Observations, 2:226. 1912.—*Polycodium quercinum* Ashe in Bul. Tor. Bot. Cb., 54; 580. 1927.

Polycodium ashei sp. nov. A shrub 5 to 10 dm. high, glabrous throughout and with fruit foliage and twigs densely glaucous. Leaves of a prevailingly ovate type with broad rounded bases; or the interior leaves and those on the twigs of an obovate type and rarely more than 3 cm. long, obtuse at apex and cordate at base, those on vigorous shoots, particularly towards the tips of the twigs sometimes of a lanceolate type, 4 to 5 cm. long, acute or acuminate, gradually tapering to the narrow, rounded base, thin but firm dark yellowish green above, densely white glaucous beneath, sometimes finely reticulated, margins not revolute; petiole about 2 mm. long. Flowers appearing from early in April in Florida to the last of May in South Carolina, are campanulate, or short campanulate from 4.5 to 5 mm. long to the tips of the short, triangular often purplish tipped corolla lobes; calyx about one-half the length of the corolla, with a broad shallow cup-shaped tube and short triangular entire divisions; hypanthium glabrous; anthers glabrous, the awn scarcely 1 mm. long; to the tips of the much exserted pollen tubes about 10 mm.; to the tip of the style about 12 mm.; bracts prevailingly foliaceous, mostly broadly ovate or the lower ones obovate, rounded or obtuse at apex, rounded or the lower cordate at the nearly sessile base, usually about two-thirds the size of the leaves, rarely much reduced. Fruit, maturing in late June in the south to early in August in South Carolina, is subglobose, 9 to 12 mm. thick, deep blue-black beneath a usually heavy bloom, the slender declining pedicels from 1.0 to 1.7 cm. long. The range of the proposed species is from north peninsular Florida, Suwannee Co., to Richland Co., S. C., in which region it is chiefly found on flatwood sites growing with longleaf and slash pines.

The following specimens have been examined. (N) indicates that the specimen is in the National Herbarium; (A) that it is in the herbarium of W. W. Ashe:

S. M. Tracy, No. 6647, Live Oak, Fla., Apr. 13, 1900 (N).

Biltmore Herbarium, No. 4361B, Aiken, S. C. (N); No. 13414C, Augusta, Ga. (N); No. 13414, Augusta, Ga. (N); No. 13414a, Sparta, Ga. (N). R. M. Harper, No. 2096, Emanuel Co., Ga., Apl. 5, 1904 (N). G. McCarthy, Columbia, S. C., May 1888 (N). McRae, Ga., May 28, 1929 (A). Kingsland, Telfair Co., Ga., May 19, 1928 (A). Hildreath, Suwanee Co., Fla., May 15, 1929 (A). Baker Co., Fla., May 31, 1929. (A). Glynn Co., Ga., Aug. 3, 1926; Mch. 26, 1927 (A). Pierce Co., Ga., Aug. 2, 1926 (A). Near Scriven, Wayne Co., Ga., Aug. 4, 1926 (A). McIntosh Co., Ga., Mch. 16, 1927 (A). Liberty Co., Ga., Aug. 4, 1926; Mch. 16, 1927 (A). Near Jesup, Wayne Co., Ga., Aug. 2, 1926 (type for fruit); Mch. 15, 1927 (type for flowers) (A). Near Jesup, Ga., Apl. 6, 1891 (Harbison herbarium). A cotype of the collection of August 2, 1926 is also deposited in the Harbison herbarium!

Highland, N. C., Sept. 1930.

BOOK REVIEWS

THE HUMAN MECHANISM. Theodore Hough, W. T. Sedgewick, and J. A. Waddell. Second Revised Edition. \$3.00. Ginn and Company.

Better illustrations and an improved typography characterize this edition of an old favorite among textbooks in physiology and hygiene. Dr. Waddell's contribution is additionally observed in the incorporation of those advances in these subjects and in public health which are directly applicable to the purposes of the text, and by changes made in the interest of greater simplicity and clearness of presentation. One could wish that many other texts would adopt as have these authors the device of numbering the paragraphs as an aid in making accurate assignments to students. I consider this text excellent for those courses in physiology which are given in the first year of a liberal arts college while teachers' colleges desiring to give a content course in this field will find it superior for that purpose. Reviewed by N. M. Grier, Wagner College, Staten Island, N. Y.

OUTLINES OF ECONOMIC ZOOLOGY. Albert M. Reese. Third Edition, pp. 323. Blakiston. \$2.50

A text eminently suitable for one semester's study of the subject and particularly adaptable for use in teachers' colleges. Instructors desiring to add to courses in general zoology more of the economic aspects of the science will find in this book a well balanced work as regards the distribution of subject matter. With regard to the economics

of animal life, it is careful to distinguish probability from fact, and thus continually suggests observation and inquiry to its reader. Animal life as a source of human food is the leading motive of this book. Particularly pertinent issues in the conservation of wild animal life are also foremost.

—Reviewed by N. M. Grier, Wagner College, Staten Island, N. Y.

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